

### **REMARKS**

By this Amendment, Applicants amend claims 1, 4, 8, 10, 11, 15-17, 20-22, and 24 and add new claims 25-28. Claims 1-28 are therefore pending in this application.

In the Office Action of February 23, 2005,<sup>1</sup> the specification was objected to for informalities; claim 4 was objected to for informalities; claims 1-14 were rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 5,883,313 to *Kim et al.* (*Kim*); and claims 15-24 were rejected under 35 U.S.C. § 103(a) as unpatentable over *Kim* in view of U.S. Patent No. 5,966,310 to *Maeda et al.* ("*Maeda*"). Applicants address the objections, rejections, and new claims below.

#### **Objection to the specification**

The Examiner objected to the specification, noting that "an method" should be replaced with "a method" in paragraph 22, line 1, and "feature" should be replaced with "features" in paragraph 23, line 6 (Office Action "OA" at 2). By this Amendment, Applicants amend the specification to correct the informalities noted by the Examiner. Applicants submit that no new matter has been added. Accordingly, Applicants request withdrawal of the objection to the specification.

#### **Objection to claim 4**

The Examiner objected to claim 4 because the claim "refers to 'the schematic' where there are multiple variations of the schematic . . ." (OA at 2). Applicants have amended claim 4 to address the Examiner's objection. Specifically, Applicants have changed "the schematic" to --the stored colored schematic--. Accordingly, Applicants request withdrawal of the objection to claim 4.

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<sup>1</sup> The Office Action contains a number of statements reflecting characterizations of the related art and the claims. Regardless of whether or not any such statement is identified herein, Applicants decline to automatically subscribe to any statement or characterization in the Office Action.

**Section 102(e) rejection of claims 1-14**

Applicants traverse the rejection of claims 1-14 under 35 U.S.C. § 102(e) because *Kim* fails to anticipate the claims. In order to properly anticipate Applicants' claimed invention under 35 U.S.C. § 102, each and every element of the claim at issue must be found, either expressly described or under principles of inherency, in a single prior art reference. Further, "[t]he identical invention must be shown in as complete detail as is contained in the . . . claim." *See* M.P.E.P. § 2131. Finally, "[t]he elements must be arranged as required by the claim." *Id.*

With regard to independent claim 1, *Kim* does not teach at least "establishing a color scheme, wherein the color scheme includes a color, representing a visible wavelength in the electromagnetic spectrum, associated with at least one of the features in the set" and "automatically colorizing the at least one feature based on the color scheme to generate a colorized schematic." In rejecting claim 1, the Examiner notes *Kim*'s disclosure of forming a "data base [or net list] of element shapes and their color as assigned" (OA at 3; *Kim*, col. 5, lines 18-19). The Examiner also notes *Kim*'s disclosure of "automatically coloring VLSI design elements" (OA at 3; *Kim*, col. 3, lines 17-20). Applicants disagree with the Examiner's interpretation of *Kim*.

*Kim* is directed to assigning binary properties to VLSI design elements to generate phase shift mask designs (Abstract). *Kim* explains that "defining portions of [a phase shifted photomask] . . . as 0° phase transition and other portions as 180° phase transition is generally referred to as phase coloring" (col. 3, lines 7-10). In *Kim*'s net "coloring" method, regions of a phase shifted mask are assigned either a 0° or 180° phase transition to reduce image intensity between the regions. According to *Kim*, "assigning a 'color' refers to determining any binary

quality” (col. 4, lines 53-56). In *Kim*’s disclosure, the binary “colors” are referred to as positive and negative (col. 4, lines 55-56).

Forming a net list of element shapes and their assigned binary qualities (which are used to effect a mask phase transition), as disclosed by *Kim*, does not constitute “establishing a color scheme, wherein the color scheme includes a color, representing a visible wavelength in the electromagnetic spectrum, associated with at least one of the features in the set,” as recited in claim 1. Indeed, *Kim*’s “binary quality,” such as positive or negative used to assign a phase transition, does not constitute a color representing a visible wavelength in the electromagnetic spectrum. Furthermore, automatically assigning VLSI design elements as either a 0° or 180° phase transition, as disclosed by *Kim*, does not constitute “automatically coloring the at least one feature based on the color scheme to generate a colored schematic,” as claimed. For at least these reasons, *Kim* does not disclose the “establishing” and “automatically coloring” features of claim 1.

Moreover, as the M.P.E.P. requires, “[d]uring patent examination, the pending claims must be “given . . . [their] broadest reasonable interpretation consistent with the specification.” M.P.E.P. § 2111 (quoting *In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000)). Although limitations from the specification are not to be read into the claim, the proper claim interpretation must be consistent with the specification. *See id.*; *see also In re Bond*, 910 F.2d 831, 833, 15 USPQ2d 1566, 1567 (Fed. Cir. 1990). “The broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach.” M.P.E.P. § 2111 (citing *In re Cortright*, 165 F.3d 1353, 1359, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999)). In addition, “the words of the claim must be given their plain meaning”

M.P.E.P. § 2111.01 (citing *In re Zletz*, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989)).

In rejecting claim 1, the Examiner appears to take the position that coloring VLSI design elements by assigning them either a 0° or 180° phase transition, as disclosed in *Kim*, is consistent with the terms “color” and “colorizing,” as recited in claim 1. The Examiner’s position is not reasonable. In *Kim*’s disclosure, “coloring” is limited to assigning binary qualities, such as assigning 0° and 180° phase transitions to effect a phase shifted mask design (e.g., col. 3, lines 7-10, col. 4, lines 32-36, col. 4, lines 53-55). A person skilled in the art of preparing and publishing schematic drawings, however, would not readily understand “color” and “colorizing,” as recited in claim 1, to mean assigning binary qualities. For these additional reasons, *Kim* fails to disclose at least the “establishing” and “automatically coloring” features of claim 1.

Because *Kim* does not teach each and every element of claim 1, as a matter of law, it cannot anticipate that claim. As such, the rejection of claim 1 under 35 U.S.C. §102(e) based on *Kim* should be withdrawn.

Independent claim 8 recites a combination including “establishing a color scheme, wherein the color scheme includes a color, representing a visible wavelength in the electromagnetic spectrum, associated at least one of the features in the set” and “automatically colorizing the at least one feature based on the color scheme to generate a colorized schematic.” Although claim 8 is of different scope than claim 1, the rejection of claim 8 under 35 U.S.C. § 102(e) should be withdrawn for at least reasons similar to those presented above in connection with claim 1.

Claims 2-7 depend upon claim 1 and claims 9-14 depend upon claim 8. As explained above, the cited art does not teach each and every element of claims 1 and 8. The § 102(e)

rejection of claims 2-7 and 9-14 should be withdrawn for at least reasons similar to those presented above in connection with claims 1 and 8, respectively. Applicants therefore request withdrawal of the § 102(e) rejection and the timely allowance of claims 1-14.

**Section 103(a) rejection of claims 15-24**

Applicants traverse the rejection of claims 15-24 because a case for *prima facie* obviousness has not been established. As M.P.E.P. § 2142 states, “[t]he examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness.” To establish *prima facie* obviousness under 35 U.S.C. § 103(a), three requirements must be met. First, the applied references, taken alone or in combination, must teach or suggest each and every element recited in the claims. *See* M.P.E.P. § 2143.03 (8th ed. 2001). Second, there must be some suggestion or motivation, either in the reference(s) or in the knowledge generally available to one of ordinary skill in the art, to combine or modify the reference(s) in a manner resulting in the claimed invention. Third, a reasonable expectation of success must exist. Moreover, each of these requirements must “be found in the prior art, and not be based on applicant’s disclosure.” M.P.E.P. § 2143 (8th ed. 2001).

With regard to independent claim 15, the Examiner conceded that *Kim* fails to disclose “the system components” (OA at 9). In an attempt to establish *prima facie* obviousness, the Examiner relied upon *Maeda* to cure *Kim*’s deficiencies. Applicants disagree with the Examiner’s position. Indeed, the Examiner has not established *prima facie* obviousness for at least the following reasons.

Claim 15 recites a combination of elements including “a colorization module configured to colorize the schematic to generate a colorized schematic.” In rejecting claim 15, the Examiner appears to take the position that coloring VLSI design elements by assigning them either a 0° or

180° phase transition, as disclosed in *Kim*, is consistent with the term “colorize,” as recited in claim 15. The Examiner’s position is not reasonable. As explained above, “coloring” within the context of *Kim*’s disclosure is limited to assigning binary qualities, such as assigning 0° and 180° phase transitions to effect a phase shifted mask design. A person skilled in the art of preparing and publishing schematic drawings, however, would not readily understand the term “colorize,” as recited in claim 15, to mean assigning binary qualities. *Kim* therefore fails to disclose at least the “colorization module” recited in claim 15.

*Maeda* does not cure *Kim*’s deficiencies. *Maeda* does not teach or suggest “a colorization module configured to colorize the schematic to generate a colorized schematic.” *Maeda* is directed to a “personal design system” for producing equipment in accordance with user designs (Abstract; col. 1, lines 10-15). The Examiner alleged that *Maeda*’s “graphics processing means” is equivalent to the claimed “colorization module” (OA at 9-10). Applicants disagree with the Examiner’s interpretation of *Maeda*.

According to *Maeda*, the “graphics processing means” produces “image display data representing the designed appearance of the equipment” and outputs “the image display data to the displaying section” (col. 2, lines 44-48). The Examiner failed to establish that *Maeda*’s “graphics processing means” is configured to colorize a schematic to generate a colorized schematic, as recited in claim 15. Producing and outputting image display data does not teach or suggest colorizing a schematic to generate a colorized schematic. *Kim* and *Maeda* therefore fail, alone and in combination, to teach or suggest each and every element recited in claim 15. As such, a *prima facie* case of obviousness has not been established by the supposed combination of *Kim* and *Maeda*.

Even if all of the features of claim 15 could be found in some combination of *Kim* and *Maeda* (to which Applicants do not acquiesce), *prima facie* obviousness has not been established at least because the Examiner failed to show the requisite motivation for combining these references. Determinations of obviousness must be supported by evidence on the record. *See In re Zurko*, 258 F.3d 1379, 1386 (Fed. Cir. 2001) (finding that the factual determinations central to the issue of patentability, including conclusions of obviousness by the Board, must be supported by “substantial evidence”). The desire to combine or modify references must be proved with “substantial evidence” that is a result of a “thorough and searching” factual inquiry. *See In re Lee*, 277 F.3d 1338, 1343-1344 (Fed. Cir. 2002) (quoting *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351-52). Moreover, the Federal Circuit has clearly stated that the evidence of a motivation or suggestion to modify a reference must be “clear and particular.” *In re Dembicziak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999).

In this case, the Examiner has not shown by “clear and particular” evidence that a skilled artisan considering *Kim* and *Maeda*, and not having the benefit of Applicants’ disclosure, would have modified or combined the references in a manner resulting in the invention defined by claim 15. The Examiner alleged that a skilled artisan would have “integrated” the teachings of *Kim* and *Maeda* “in order to make the schematic more easily manipulated and viewable by a generic user” (OA at 10). This allegation by the Examiner is not properly supported and does not show that a skilled artisan would have combined the references as alleged. The Federal Circuit has indicated “three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art.” *Rouffet*, 149 F.3d, at 1357, 47 USPQ2d, at 1457-58. The Examiner has not provided support for alleged motivation from either of these three sources. Indeed, the

Examiner provides no “clear and particular” evidence from the applied references, the nature of the problem to be solved, or the knowledge of persons of ordinary skill in the art regarding a generic user easily manipulating and viewing a schematic.

Furthermore, as M.P.E.P. § 2141.02 articulates, “[i]n determining the differences between the prior art and the claims, the question under 35 U.S.C. § 103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious (internal citations omitted). The Federal Circuit has explained that an examiner may find every element of a claimed invention in the prior art but mere identification is not sufficient to negate patentability. *In re Rouffet*, 149 F.3d 1350, 1357, 47 U.S.P.Q.2d 1453, 1457 (Fed. Cir. 1998). The court explained that “the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed.” *Id.* In this case, the Examiner merely alleged that *Kim* and *Maeda* disclose certain subject matter and has not established that the claimed invention as a whole would have been obvious. The Examiner appears to be improperly using Applicants’ claims in hindsight to reconstruct the prior art.

For at least the foregoing reasons, *prima facie* obviousness has not been established with respect to claim 15 and the rejection of that claim under 35 U.S.C. § 103(a) should be withdrawn. The § 103(a) rejection of dependent claims 16-21 should be withdrawn for at least reasons similar to those set forth above in connection with claim 15. Applicants thus request withdrawal of the § 103(a) rejection and the timely allowance of claims 15-21.

Independent claim 22 recites, *inter alia*, a “colorization module” configured to “establish a color scheme, wherein the color scheme includes a color, representing a visible wavelength in



the electromagnetic spectrum, associated with each of the features in the set” and “automatically colorize the features based on the color scheme to generate a colorized schematic.” Although claim 22 is of different scope than claim 1, *Kim* fails to teach or suggest the above-noted features of claim 22 for at least reasons similar to those presented above in connection with claim 1.

*Maeda* does not cure *Kim*’s deficiencies. The Examiner has not shown that *Maeda* teaches or suggests a “colorization module,” as recited in claim 22. Although *Maeda* discloses “graphics processing means,” the Examiner has not established that the “graphics processing means” is configured to “establish a color scheme, wherein the color scheme includes a color, representing a visible wavelength in the electromagnetic spectrum, associated with each of the features in the set” and “automatically colorize the features based on the color scheme to generate a colorized schematic,” as recited in claim 22. *Kim* and *Maeda* therefore fail, alone and in combination, to teach or suggest each and every element recited in claim 22. As such, a *prima facie* case of obviousness has not been established by the supposed combination of the cited art.

Even if all of the features of claim 22 could be found in some combination of *Kim* and *Maeda* (to which Applicants do not acquiesce), *prima facie* obviousness has not been established at least because the Examiner failed to establish the requisite motivation for combining these references. The Examiner alleged that a skilled artisan would have “integrate[d]” the teachings of *Kim* and *Maeda* “in order to make the schematic more easily manipulated and viewable by a generic user” (OA at 14). As explained above in connection with claim 15, this allegation by the Examiner is not properly supported and does not show that a skilled artisan would have combined the references as alleged. The Examiner again appears to be improperly using Applicants’ claims in hindsight to reconstruct the prior art.

Because the Examiner failed to establish *prima facie* obviousness with respect to claim 22, the rejection of that claim under 35 U.S.C. § 103(a) should be withdrawn. The § 103(a) rejection of dependent claims 23 and 24 should be withdrawn as well, for at least reasons similar to those set forth above in connection with claim 22. Applicants thus request withdrawal of the § 103(a) rejection and the timely allowance of claims 22-24.

**New claims 25-28**

Each of new claims 25-28 depends upon claim 1, which, for at least the reasons set forth above, is allowable over *Kim* and *Maeda*. New claims 25-28 are allowable over the cited art at least because of such dependency. Further, Applicants submit that the applied art fails to teach or suggest various features recited in new claims 25-28. Applicants therefore request the timely allowance of new claims 25-28.

**Conclusion**

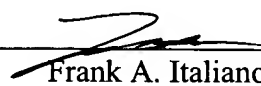
Applicants request the Examiner's reconsideration of the application in view of the foregoing, and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,  
GARRETT & DUNNER, L.L.P.

Dated: May 23, 2005

By:   
Frank A. Italiano  
Reg. No. 53,056